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Title: Single Crystal UO2 cube creation using a Xe Plasma FIB

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Intended for: Inform Foreign National co-investigators of the process involved in making Uranium Oxide cubes that being sent to them for a beam line experiment in Germany.

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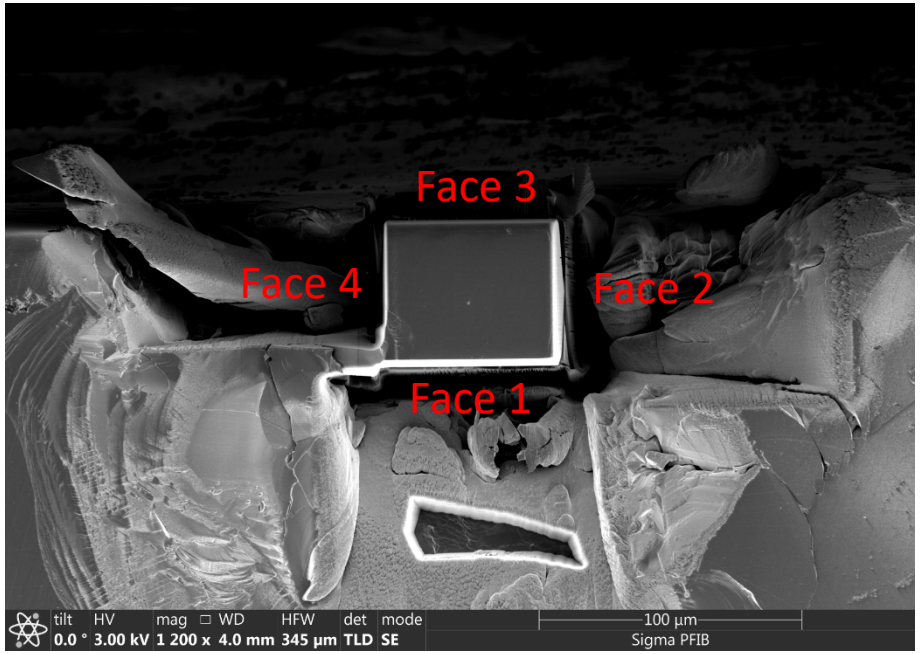
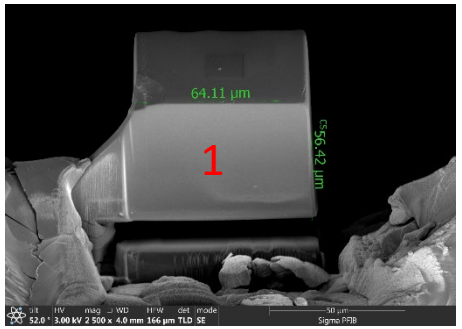
Single Crystal UO_2 cube creation using a Xe Plasma FIB

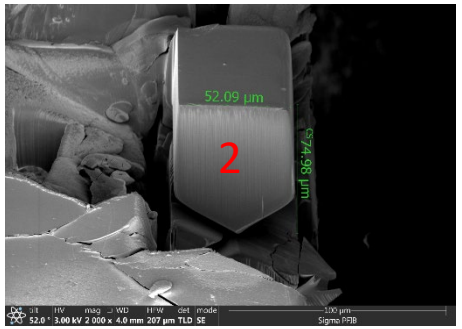
Eric Tegtmeier Sigma-2
Caitlin Taylor MST-8

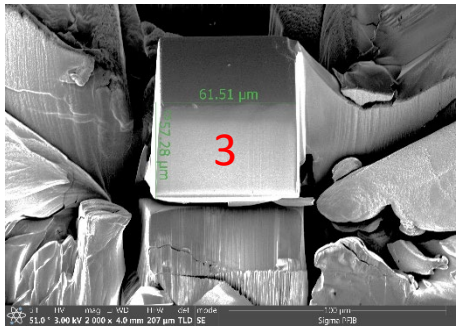
Cube from (100) crystal

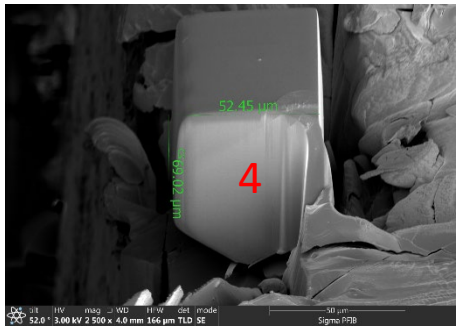


Top of cube in plan view. Four edges numbered

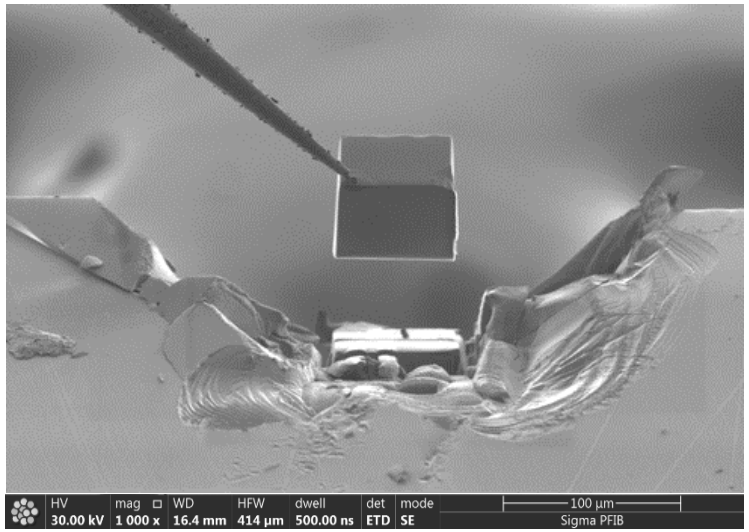






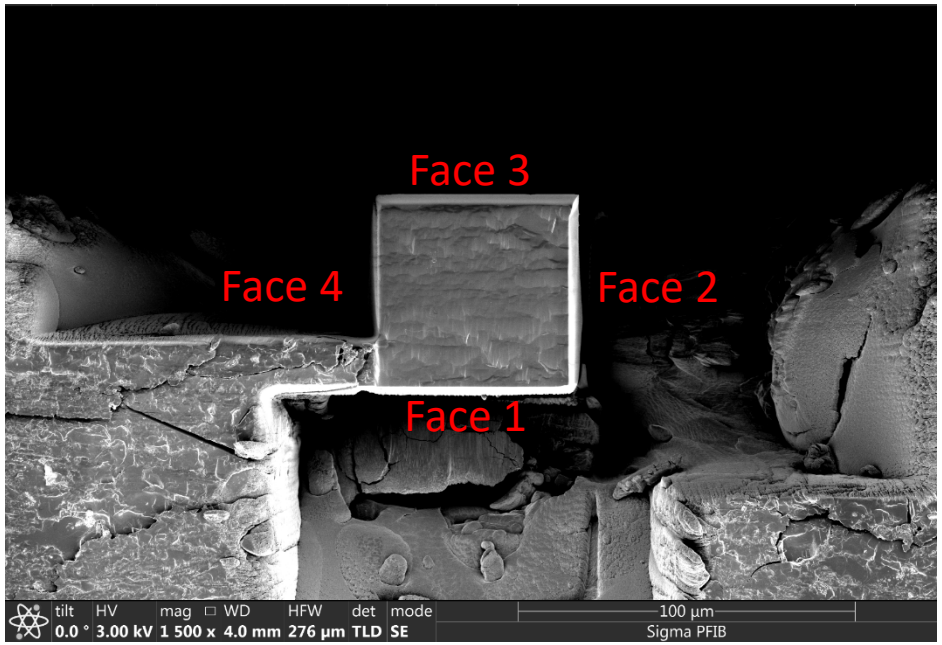


Four edges of cube prior to lift out

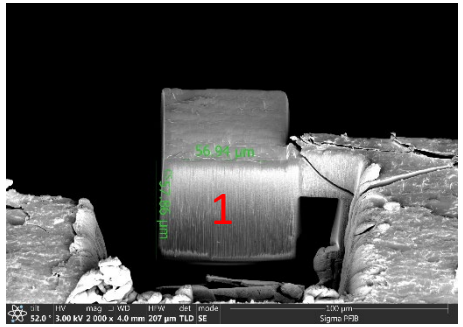


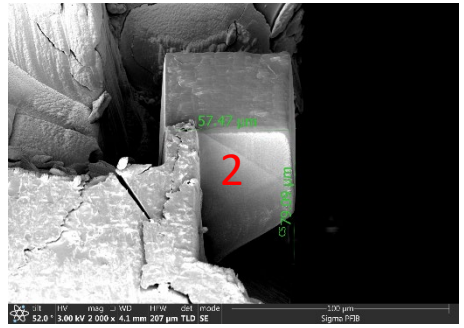
Cube attached to W probe with amorphous carbon (small black splotch at end of needle)

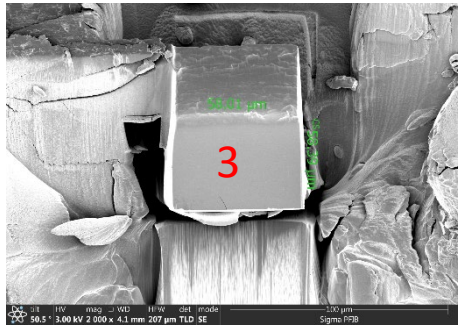
Cube from (111) crystal

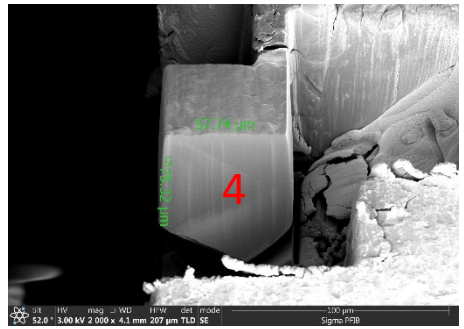


Top of cube in plan view. Four sidewalls numbered

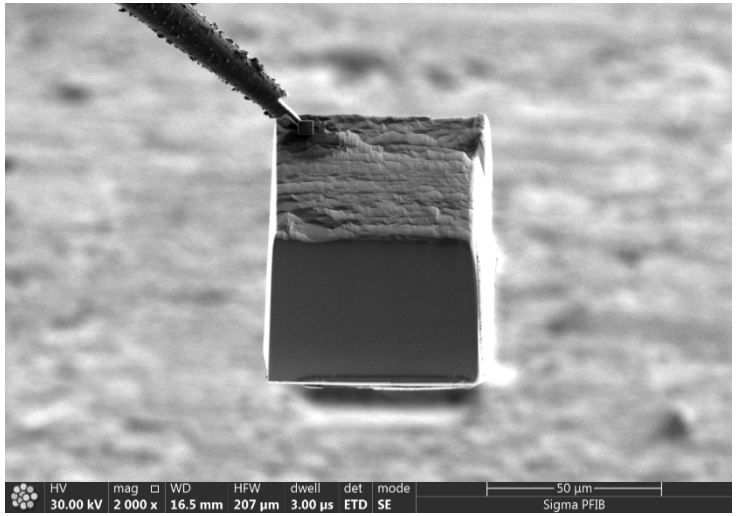






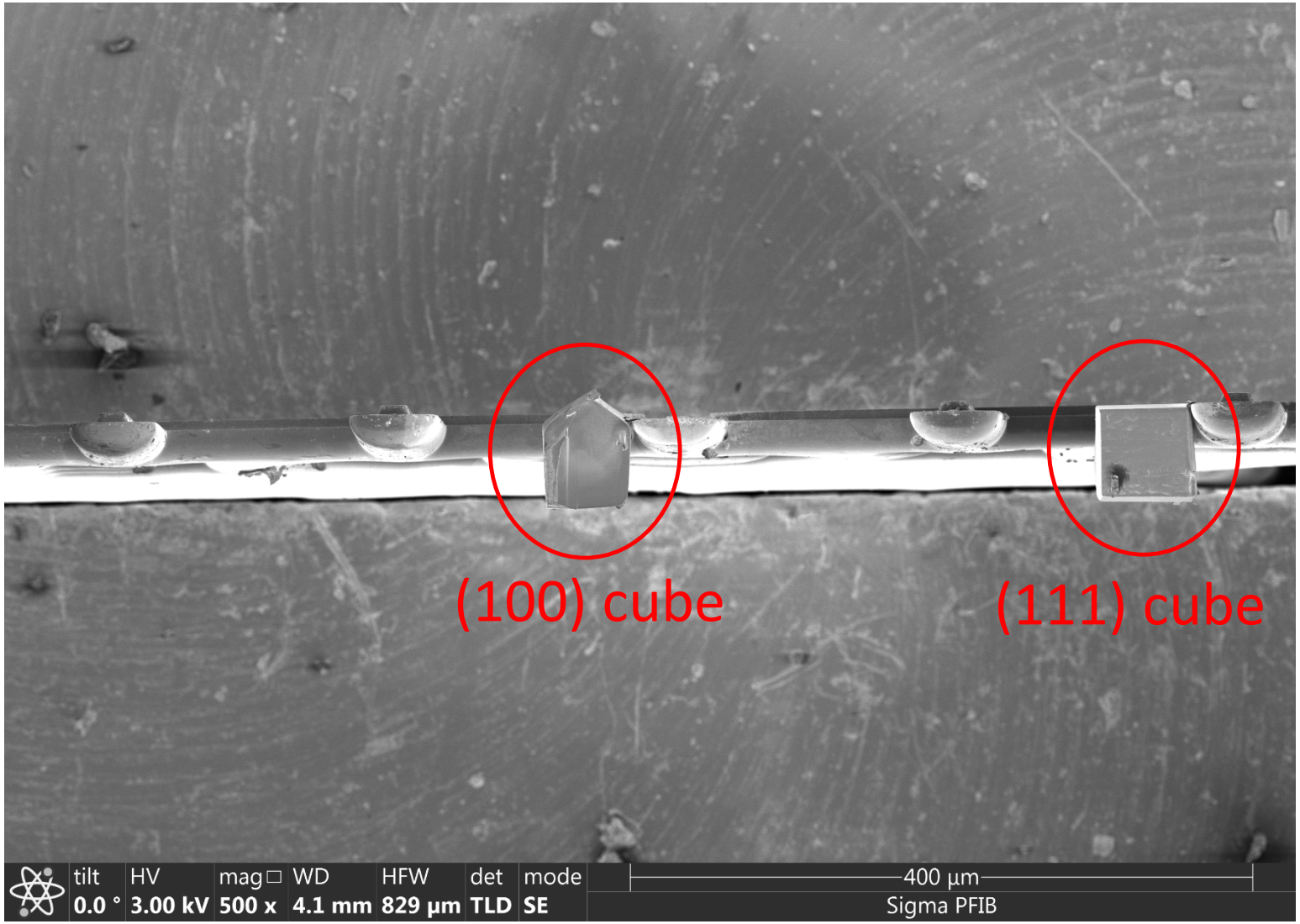


Four edges of cube prior to lift out

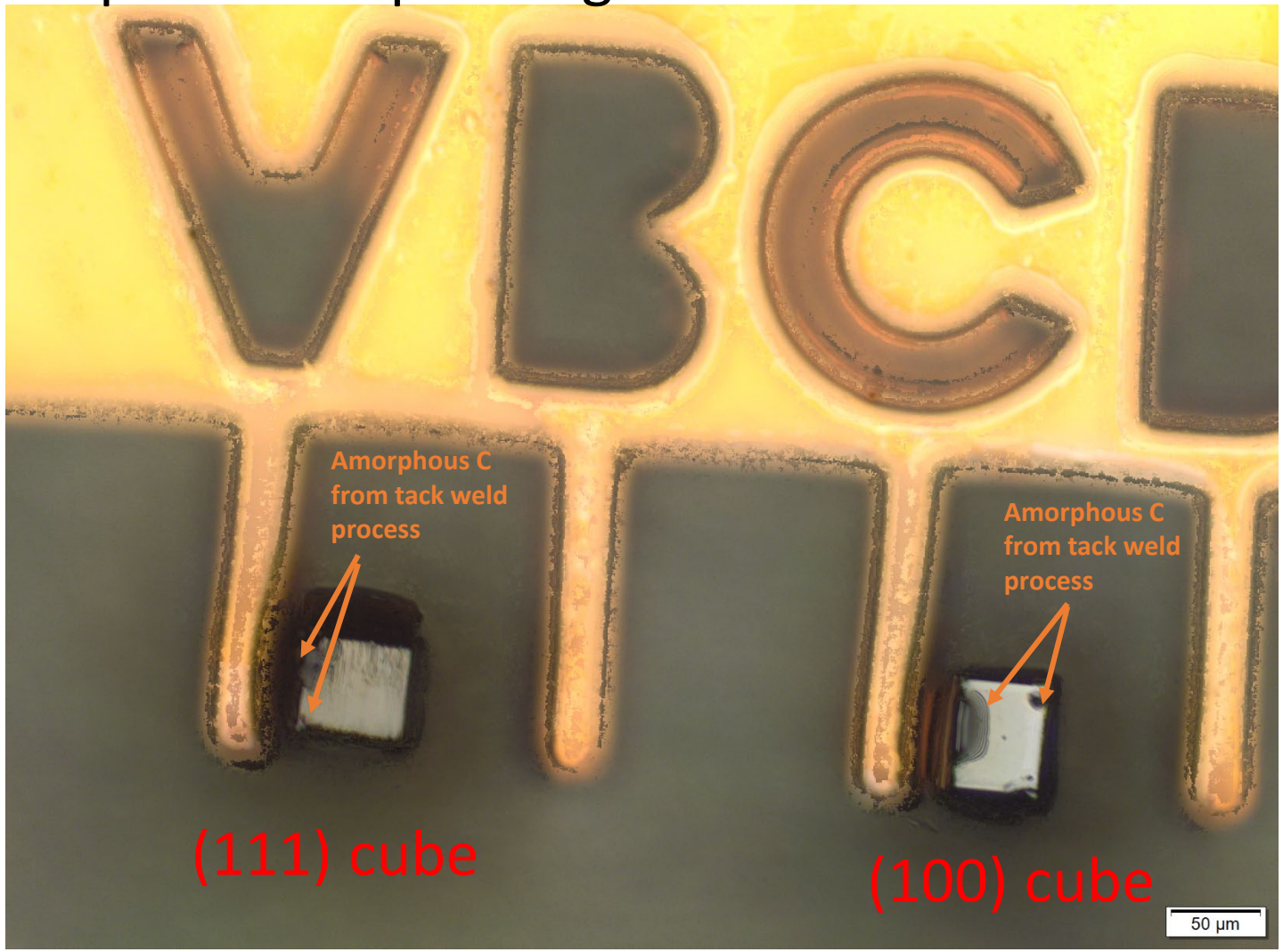


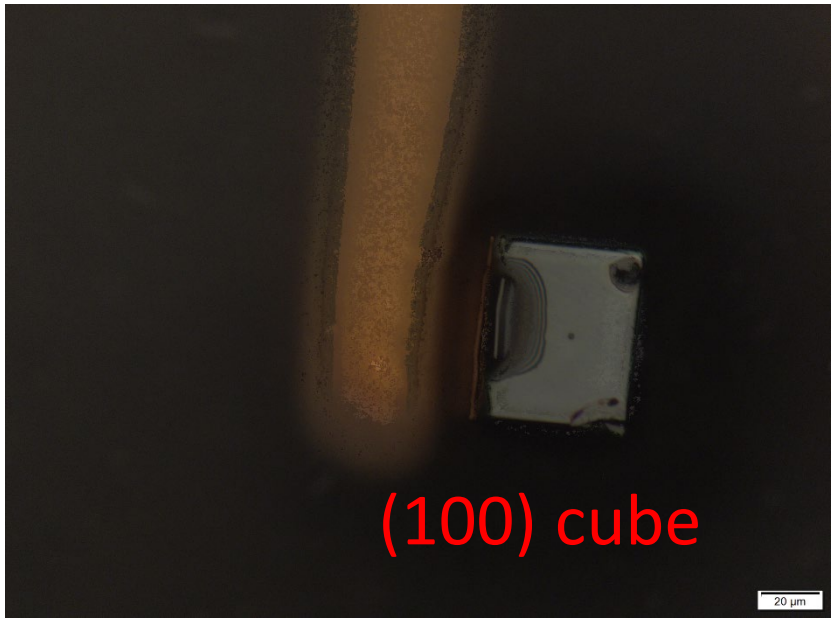
Cube attached to W probe with amorphous carbon (small black splotch at end of needle)

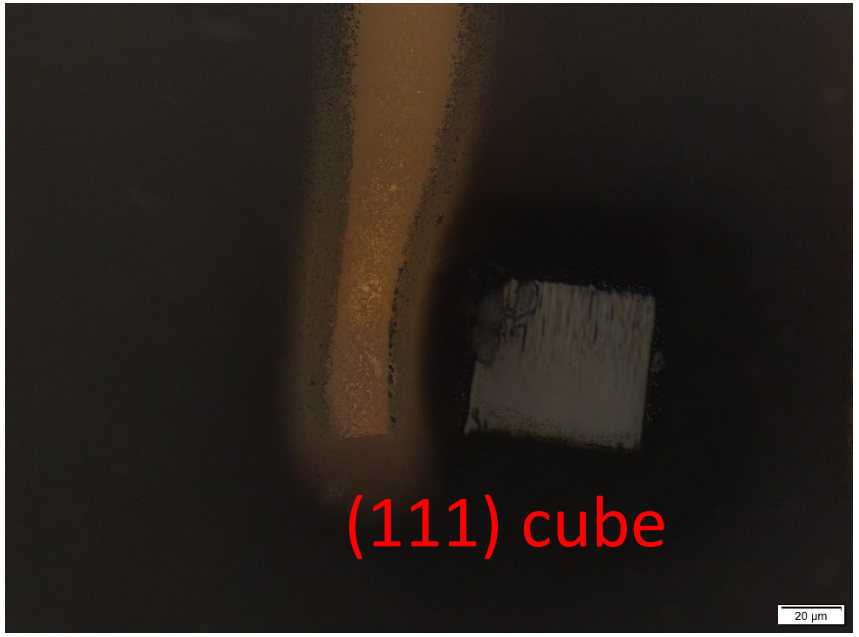
E beam image of two cubes welded to Cu posts of TEM grid



Optical of two cubes attached to Cu TEM grid as placed in apiezon grease







Amorphous C deposits are only ~1-2 microns thick at maximum.